

[54] CAPACITANCE SWITCHING DEVICE FOR KEYBOARD

[75] Inventors: Isao Mochizuki, Nannocho;
Mitsumasa Kako, Tokai; Yoshihisa
Masuda, Komaki, all of Japan

[73] Assignee: Brother Kogyo Kabushiki Kaisha,
Nagoya, Japan

[21] Appl. No.: 27,485

[22] Filed: Mar. 18, 1987

[30] Foreign Application Priority Data

Mar. 27, 1986 [JP] Japan 61-69359
Apr. 1, 1986 [JP] Japan 61-74523

[51] Int. Cl.⁴ H01G 5/01; H01H 13/52

[52] U.S. Cl. 200/52 R; 200/DIG. 1;
200/159 B; 361/288

[58] Field of Search 200/5 A, 52 R, DIG. 1,
200/159 B, 306; 361/288; 340/365 C; 400/479,
479.1

[56] References Cited

U.S. PATENT DOCUMENTS

Re. 30,435 11/1980 Fukao 200/DIG. 1 X
3,696,908 10/1972 Gluck et al. 200/DIG. 1 X
3,750,149 7/1973 Sessler et al. 340/365 C
4,066,855 1/1978 Zenk 200/306
4,376,239 3/1983 Long et al. 200/5 A X
4,659,879 4/1987 Hasegawa 200/DIG. 1 X

FOREIGN PATENT DOCUMENTS

60-117512 6/1985 Japan .

Primary Examiner—J. R. Scott

Attorney, Agent, or Firm—Kane, Dalsimer, Sullivan,
Kurucz, Levy, Eisele and Richard

[57] ABSTRACT

Disclosed is a capacitance keyboard switching device comprising a fixed electrode formed on one surface of a first insulating film, a movable electrode formed on one surface of a second insulating film, a spacer interposed between the first and second insulating films and provided with a switching opening formed through the spacer for allowing the fixed and movable electrodes to come close to and separate from each other with one of the first and second insulating films interposed between the fixed and movable electrodes, a movable electrode depressing member provided with a depressing portion for depressing the movable electrode to cause the movable electrode to come close to the fixed electrode through the one insulating film, in order to keep the movable electrode flat when the movable electrode is depressed toward the fixed electrode, the depressing portion is provided with a surface area selected to be larger than a surface area of the movable electrode so that the surface area of the depressing member completely covers the surface area of the movable electrode when the depressing portion depresses the movable electrode, or the second insulating film is provided with slots formed therein.

9 Claims, 7 Drawing Sheets

